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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,621	02/18/2004	Zhiguo Xiao	CCPIT-7	5095

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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/782,621

Applicant(s)

XIAO ET AL.

Examiner

C. Melissa Koslow

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10, 12, 13 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12, 13 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 June 2006 has been entered.

The amendments to the claims have overcome the 35 USC 112 rejection and the art rejections based on U.S. patent 4,963,441. Applicant's arguments with respect to the remaining art rejections have been fully considered but they are not persuasive.

Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendment to claim 10 is new matter. There is no teaching in the originally filed disclosure that the matrix glass of claim 1 has the composition of claim 10. Page 8 of the specification teaches conventional silicate glasses have this composition and page 9 distinguishes this glass from borate glasses, phosphate glasses, halide glasses, sulfide glasses and sodium-calcium-silicon glasses.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-10409.

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This reference teaches a luminous glass comprising a light-storage self-luminescent material having a size in the range of 0.1-1 mesh in a glass matrix. This glass is formed by melting a glass, adding the light-storage self-luminescent material to the melt and glass-blowing the molten glass at 800-1000°C, which overlaps the claimed range. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). While the glass composition is not specified, it is clear and obvious that it can be any glass commonly produced by glass blowing and which can be colored with a light-storage self-luminescent material, such as a conventional sodium-calcium-silicate glass. The taught mesh size range appears to correspond to a inch scale mesh. Thus the taught size range of 0.1-1 mesh appears means the luminescent material has a particle size in the range of 0.1-1 inch, or 2.54-25.4 mm, which overlaps the claimed range. While the reference does not teach the amount of luminescent material, it is clear that the amount is that effective to form a luminous glass. It is known in the art, as shown by the cited references, that this effective amount is 40 wt% or less, which overlaps the claimed range. The reference suggests the claimed glass and process.

Claims 2-5, 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-10409 as applied to claim 1 above, and further in view of U.S. patents 5,839,718; 6,431,236; 6,617,781 and 6,071,432.

As stated above, JP 2004-10409 suggests the claimed glass. The light-storage luminescent material in JP 2004-10409 emits green light. If one of ordinary skill in the art wish for the glass to emit a different color, one would have found it obvious to replace the taught

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green light emitting material with any other color emitting light-storage luminescent materials, such as with the red, blue-green or blue light emitting phosphors taught U.S. patents 5,839,718; 6,617,781; 6,431,236 and 6,071,432 which have the formulas of the materials claimed in claims 2-5. The references suggest the claimed glass.

Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-10409 as applied to claim 1 above, and further in view of U.S. patent 5,424,006.

As stated above, JP 2004-10409 suggests the claimed glass. The light-storage luminescent material in JP 2004-10409 emits green light, but it is not defined. One of ordinary skill in the art would have found it obvious to use the green light emitting aluminate light-storage luminescent material of U.S. patent 5,424,006, which have the formulas of claims 6 and 7, since they have a long afterglow, are more chemically stable and have higher photoresistance. The references suggest the claimed glass.

Applicants argue that 0.1 mesh corresponds to a tenth of an opening per linear inch or equivalent to 10 inches, not to a tenth of an inch as argued by the Examiner. The basis for their support is a supplied translation a paragraph in section 1.4.5 of "Classification Technique of Ultra-Fine Pulverization" of ISO standard screens. The translation related to the provided table where the largest particle is 0.9 mm, 9 microns, about 20 mesh (Tyler) or about 18 mesh (ISO). This table is silent as to particles around 1 inch or 2.54 mm. The supplied table from Sigma-Aldrich teaches that between  $\frac{1}{4}$  to 1 inch or mesh, the mesh refers to the size of the opening in inches and at mesh sizes of 3  $\frac{1}{2}$  and larger, the mesh refers to the number of openings per linear inch. The Sigma-Aldrich table supports the Examiner interpretation of the meaning of 0.1 mesh.

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It shows 0.25 mesh is the size of the opening in inches not that the opening is 4 inches as argued.

Thus this argument is not convincing.

Applicants argue the reference does not teach a mixture of molten glass and self-luminescent material because the material is applied equally to the surface of the molten glass. The composition resulting from the application of the material on the molten glass is a mixture. In fact, the taught process of adding the material is that of examples 2 and 4 of this application. Thus this argument is not convincing. The rejections are maintained.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk  
July 27, 2006



C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700